

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel cell electrical power generation system comprising:
a reformer through which an oxygen-containing gas and a source gas are flowed and which has a catalytic part for causing the partial oxidation of hydrocarbons contained in said source gas, and

a solid electrolyte fuel cell which is disposed downstream of said reformer and which has a cell main unit which includes: a fuel electrode which is supplied with a partial oxidation gas which contains hydrogen generated as a result of the flowing of said source gas and said oxygen-containing gas through said reformer; an oxygen electrode which is supplied with an oxygen-containing gas; and an electrolyte which lies between said fuel electrode and said oxygen electrode, wherein an electrode reaction of said partial oxidation gas and said oxygen-containing gas is caused to take place in said fuel electrode, said oxygen electrode and said electrolyte, and said fuel cell having a temperature that is below a minimum operating temperature of approximately 700 degrees Centigrade.

2. (Previously Presented) A fuel cell electrical power generation system comprising:
a reformer having a catalytic part which when a source gas is flowed therethrough converts hydrocarbons, contained in said source gas and having a carbon number equal to or greater than 2, into methane under the presence of hydrogen, and which when an oxygen-containing gas and said source gas are flowed therethrough causes the partial oxidation of hydrocarbons contained in said source gas, and

a solid electrolyte fuel cell which is disposed downstream of said reformer and which has a cell main unit which includes: a fuel electrode which is supplied with a hydrogen-containing gas; an oxygen electrode which is supplied with an oxygen-containing gas; and an electrolyte which lies between said fuel electrode and said oxygen electrode, wherein an electrode reaction of said hydrogen-containing gas and said oxygen-containing gas is caused to take place in said fuel electrode, said oxygen electrode and said electrolyte,

said fuel cell electrical power generation system performing:

a startup operation in which said source gas and said oxygen-containing gas are flowed through said catalytic part of said reformer, and a partial oxidation gas which contains hydrogen generated as a result of the flowing of said source gas and said oxygen-containing gas through said reformer is supplied to said fuel electrode as said hydrogen-containing gas, and

a normal operation in which said source gas is flowed through said catalytic part of said reformer and a fuel gas which contains methane generated as a result of the flowing of said source gas through said reformer is supplied to said fuel electrode.

3. (Previously Presented) The fuel cell electrical power generation system of claim 1 or claim 2 further comprising:

a heat exchange means for performing heat exchange between said source gas and said oxygen-containing gas prior to their entry into said reformer and said partial oxidation gas discharged out of said reformer.

4. (Previously Presented) The fuel cell electrical power generation system of claim 1 or claim 2 further comprising:

a combustion means for burning said source gas and said oxygen-containing gas during a startup phase of said reformer, and

a combustion gas supply means for supplying to said reformer a combustion gas generated as a result of the burning of said source gas and said oxygen-containing gas in said combustion means so that said reformer is heated.

5. (Previously Presented) The fuel cell electrical power generation system of claim 1 or claim 2 further comprising:

a combustion means for burning said source gas and said oxygen-containing gas before said electrode reaction starts taking place, and

a combustion gas supply means for supplying to said oxygen electrode a combustion gas generated as a result of the burning of said source gas and said oxygen-containing gas in said combustion means so that said oxygen electrode is heated.

6. (Previously Presented) The fuel cell electrical power generation system of claim 1 or claim 2 further comprising:

a combustion means for burning said source gas and a first oxygen-containing gas,

a heat exchange means for performing heat exchange between a combustion gas generated as a result of the burning of said source gas and said first oxygen-containing gas in said combustion means and a second oxygen-containing gas different from said first oxygen-containing gas, and

oxygen-containing gas supply means for supplying to either or both said reformer and said oxygen electrode said second oxygen-containing gas heated by said heat exchange means.

7. – 14. (Canceled)